ELSEVIER

Volume 185, Issues 1–3, 30 April 2007

Journal of Materials Processing Technology

www.elsevier.com/locate/jmatprotec

Contents

Editorial

Preface for the CCAMT 2004 (India) and the 3rd ICAMT 2004 (Malaysia) conferences 1
V.C. Venkatesh

Precision Processes

Tool-based nanofinishing and micromachining 2
M. Rahman, H.S. Lim, K.S. Neo, A. Senthil Kumar, Y.S. Wong, X.P. Li

Laser cleaning and dressing of vitrified grinding wheels 17
M.J. Jackson, A. Khangar, X. Chen, G.M. Robinson, V.C. Venkatesh, N.B. Dahotre

Performance of single crystal diamond tools in ductile mode cutting of silicon 24
M.S. Uddin, K.H.W. Seah, M. Rahman, X.P. Li, K. Liu

Development of a novel binderless diamond grinding wheel for machining IC chips for failure analysis 31
V.C. Venkatesh, S. Izman

Incorporation of 3 μm SiC_p into Titanium surfaces using a 2.8 kW laser beam of 186 and 373 MJ m^{-2} energy densities in a nitrogen environment 38
S. Mridha, T.N. Baker

Conventional Machining

Development of hybrid predictive models and optimization techniques for machining operations 46
I.S. Jawahir, X. Wang

Improvements in the machining of aero-engine alloys using self-propelled rotary tooling technique 60
E.O. Ezugwu

Performance of coated- and uncoated-carbide tools when drilling titanium alloy—Ti–6Al4V 72
S. Sharif, E.A. Rahim

Performance of alloyed uncoated and CVD-coated carbide tools in dry milling of titanium alloy Ti-6242S 77
C.H.C. Haron, A. Ginting, H. Arshad

Dry turning of tempered martensitic stainless tool steel using coated cermet and coated carbide tools 83
M.Y. Noordin, V.C. Venkatesh, S. Sharif

Effectiveness of cryogenic machining with modified tool holder 91
M.I. Ahmed, A.F. Ismail, Y.A. Abakr, A.K.M.N. Amin

Influence of preheating on performance of circular carbide inserts in end milling of carbon steel 97
A.K.M.N. Amin, I. Abraham, N. Khairusshima, M.I. Ahmed

Heat Treatment and Rapid Prototyping

Effect of heat treatment on the diffusion coefficient of hydrogen absorption in gamma-titanium aluminide 106
K. Suardi, E. Hamzah, A. Ourdjini, V.C. Venkatesh

The effect of specimen thickness on the hardness of plasma surface hardened ASSAB 760 steel specimens 113
L.J. Yang

Smart materials and the influence of atom sizes on martensite microstructures in copper-based shape memory alloys 120
O. Adiguzel

Part deposition orientation studies in layered manufacturing 125
P.M. Pandey, N. Venkata Reddy, S.G. Dhande

Elsevier B.V.

Forming, Solidification, and Bulk Deformation Processes

Comments on the cold metal forming processes stability control 132
K. Kuzman

Precision forging processes for high-duty automotive components 139
B.-A. Behrens, E. Doege, S. Reinsch, K. Telkamp, H. Daehndel, A. Specker

Deep-drawing of magnesium alloy sheets at warm temperatures 147
S.H. Zhang, K. Zhang, Y.C. Xu, Z.T. Wang, Y. Xu, Z.G. Wang

The optimization of a concasting technology by two numerical models 152
F. Kavicka, J. Stetina, B. Sekanina, K. Stransky, J. Dobrovska, J. Heger

Finite element analysis for the mechanical features of resistance spot welding process 160
Z. Hou, I.-S. Kim, Y. Wang, C. Li, C. Chen

Computational modeling of 3D powder compaction processes 166
A.R. Khoei, A.R. Azami, S. Azizi

Precision Processes

Development of an electric field sensor based on second harmonic generation with electro-optic materials 173
N.J. Vasa, Y. Kawata, R. Tanaka, S. Yokoyama

Gelling of chips during vertical surface diamond grinding of BK7 glass 178
S. Izman, V.C. Venkatesh

Online monitoring of acoustic emission for quality control in drilling of polymeric composites 184
S. Arul, L. Vijayaraghavan, S.K. Malhotra

Simulation of whirling process and tool profiling for machining of worms 191
L.V. Mohan, M.S. Shunmugam

Investigations on laser percussion drilling of some thermoplastic polymers 198
N. Masmiati, P.K. Philip

Conventional Machining

Effect of point geometry and their influence on thrust and delamination in drilling of polymeric composites 204
A. Velayudham, R. Krishnamurthy

Performance of coated tools during hard turning under minimum fluid application 210
C.R.V. Kumar, B. Ramamoorthy

A soft computing approach for controlling the quality of cut with abrasive waterjet cutting system experiencing orifice and focusing tube wear 217
J.J. Rozario Jegaraj, N. Ramesh Babu

Forming, Solidification, and Bulk Deformation Processes

An assessment of stresses in thin walled welded tubes through hole drilling and sectioning methods 228
P.V. Venkitakrishnan, J. Philip, R. Krishnamurthy

Rolling contact fatigue studies on spray formed ceramics composite rolling elements 233
M.V. Gopalakrishnan, R. Krishnamurthy, C.V. Golkularathnam

Author index 238

Subject index 239